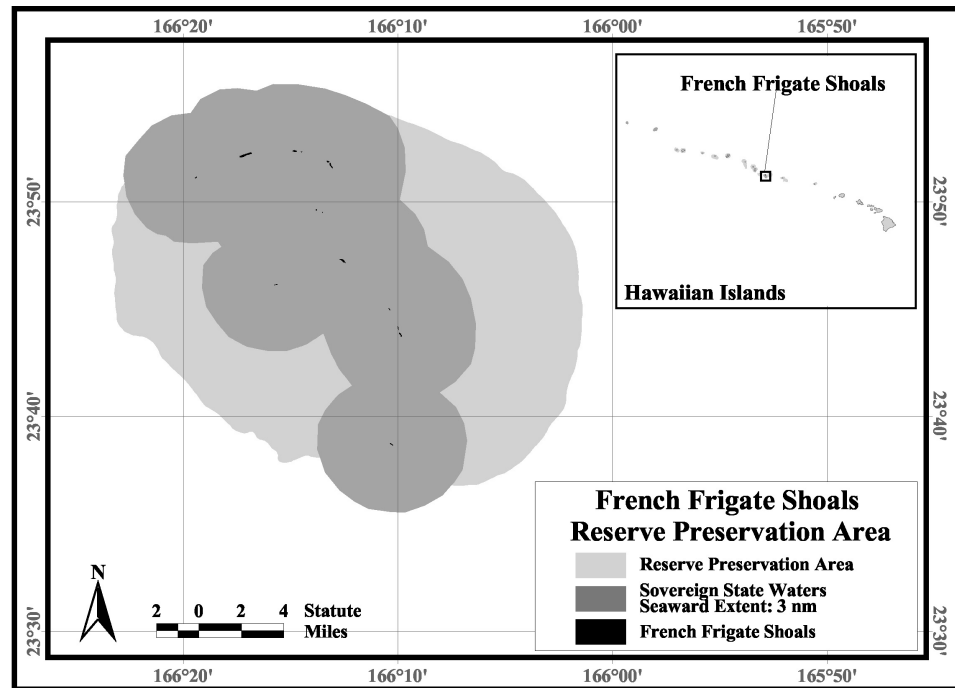


## French Frigate Shoals Reserve Preservation Area

### MAP



This reserve preservation area is approximated using fathoms (fm) but shall be represented in future maps by the Secretary using straight-line boundaries in longitude and latitude coordinates to clearly encompass the reserve preservation area and to provide clarity and ease of identification.

### RESERVE PRESERVATION AREA

The Reserve Preservation Area for French Frigate Shoals includes the waters and submerged lands from the seaward boundary of Hawaii state waters out to a mean depth of 100 fathoms.

### ENVIRONMENT

French Frigate Shoals (FFS) is an 18 mile (34 km) wide, crescent-shaped atoll. It is approximately 1,330 km northwest of Honolulu and approximately 1,300 km southeast of Kure Atoll. The Shoals' lagoon contains two exposed volcanic rocks and 12 low sandy islets. About 67 acres of land and 230,000 acres of coral reef habitat are associated with FFS which makes it the largest atoll in the Northwestern Hawaiian Islands.

The substrates of the atoll are predominantly reef carbonates and provide for abundant coral reef habitats such as deep ocean reef slopes, ocean reef terraces, spurs and grooves and shallow perimeter reef flats.

The Shoals' semi-enclosed lagoon affords corals protection from the destructive effects of storms and waves and provides many other important reef habitats missing from exposed ocean reef environments. Dominated by algae, rubble and sand deposits, the lagoon also contains numerous pinnacles, mounds, and platforms.

Recent surveys have shown that wave action, large ocean swells and periodic storms often impact FFS' coral development and tend to control extensive reef growth. Yet, due to the complexity and quantity of its habitats, coral diversity and abundance is spectacular at the atoll. The best coral development occurs near the lagoon ends of the reef where exposure to waves and storms is reduced and where the influx of clean ocean water promotes habitat diversity and good water quality. Poorer reef habitats were concentrated in the shallow eastern lagoon, which is dominated by shallow sediment deposits, strong currents, high turbidity, and poor water quality.

Because FFS is close to Johnston Atoll, where table coral species are abundant, it may be serving as the "stepping stone" for the recruitment of table corals (*Acropora*) in the Hawaiian Islands. Although in lesser abundance, four other islands near FFS (Necker Island, Gardner Pinnacles, Maro Reef, and Laysan Island) also support *Acropora*. FFS may be responsible for the distribution table coral as far as Kauai as well, where populations of *Acropora*, have also been recently reported.

French Frigate Shoals is home to the largest breeding colony of the endangered monk seal while serving as the breeding ground for 90% of threatened green sea turtles in the Hawaiian Islands. Derelict fishing gear and other types of marine debris are, however, having a major impact on the reefs and associated fauna of the atoll, notably monk seals. Over the past several years, efforts have been undertaken to lessen the threat of this growing problem.

The Hawaiian Islands National Wildlife Refuge is currently administered out to 10 fathoms at French Frigate Shoals.